Approved For Release 2008/01/08 : CIA-RDP78B04558A000800090002-3 25X1

TOP SECRET

OUT51939

HFS
CJS
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PRIORITY 1

25X1

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Grace (File)

P 301808Z
FM NPIC
TO AFSSO USAFE
AFSSO PACAF
[redacted]
CNO
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YWQLAZC/AFSSO SAC
YWQLAZC/AFSSO ACIC
YWQLAZC/AFSSO FTD
YWQLAZC/AFSSO DIA PROD CTR
ZEM
T O P S E C R E T [redacted] 25X1

[redacted] RELEASABLE FROM SSO CHANNELS. SSOS PASS 25X1

TO APPROPRIATE TCOS. CITE NPIC 1215. THE FOLLOWING INFORMATION IS FROM THE NATIONAL PHOTOGRAPHIC INTERPRETATION CENTER.

SUBJECT: CAMERA INFORMATION FOR MISSION 1002-1.

A. THIS PHOTOGRAPHY INVOLVES THE USE OF EIGHT CAMERAS: TWO MAIN CAMERAS, FOUR HORIZON CAMERAS, STELLAR CAMERA AND AN INDEX CAMERA.

NOTE: S/I DATA FOR 1002-2 NOT AVAILABLE AT THIS TIME.

B. OPERATIONAL FOCAL LENGTHS

	FWD UNIT	AFT UNIT
(1) MAIN LENS	609.627 MM	609.577 MM
(2) PORT HORIZON LENS	89.10 MM	89.8 MM
(3) STARBOARD HORIZON LENS	89.75 MM	89.7 MM
(4) STELLAR CAMERA	84.00 MM	
(5) INDEX CAMERA	38.53 MM	

C. LENS DISTORTION (PIN CUSHION)

(1) MAIN LENS	FWD UNIT	AFT UNIT
3 DEGREES	.0025 MM	.006 MM
2 DEGREES	.001 MM	.0025 MM

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GROUP 1 ed from automatic vngrading and classification

TOP SECRET

Approved For Release 2008/01/08 : CIA-RDP78B04558A000800090002-3

Approved For Release 2008/01/08 : CIA-RDP78B04558A000800090002-3

1 DEGREE	.000 MM	.0015 MM
Ø DEGREE	.000 MM	.000 MM

(2) HORIZON CAMERAS

	FWD		AFT	
	PORT	STARBOARD	PORT	STARBOARD
(RADIAL) 10 DEGREES	.005 MM	.007 MM	.011 MM	.009 MM
20 DEGREES	.046 MM	.041 MM	.046 MM	.040 MM
(TANGENTIAL) MAX VECTOR	.002 MM	.004 MM	.010 MM	.007 MM

D. DEPRESSION ANGLES OF HORIZON CAMERAS RELATIVE TO NOMINAL MAIN CAMERA.

FWD	PORT	STARBOARD
FWD	15 DEGREES 24' 18"	14 DEGREES 32' 39"
AFT	14 DEGREES Ø8' 54"	15 DEGREES 3Ø' Ø3"

E. CAMERA FILTER AND EXPOSURE DATA.

	MAIN	HORIZON	STELLAR	INDEX
FILTER	WRATTEN 21	WRATTEN 25	NONE	WRATTEN 21
APERTURE	F 3.5	F 6.8	F 1.9	F 4.5
SLIT WIDTH/EXPOSURE	.250 INCH	1/100 SEC	2 TO 5 SEC	1/500 SEC
FILM	SO 132	SO 132	SO 102	SO 130

F. RESOLUTION CAPABILITIES.

1. (L/MM AVG)	MAIN	PORT HORIZON	STARBOARD HORIZON
FWD	168	36	35.4
AFT	156	36	37

2. INDEX (L/MM AWAR) (1) 82.175

Approved For Release 2008/01/08 : CIA-RDP78B04558A000800090002-3

Approved For Release 2008/01/08 : CIA-RDP78B04558A000800090002-3

G. TIMING MARKS.

FREQUENCY MARKS WILL APPEAR ON THE FILM. RATE OF TIMING MARKS WILL BE 200 CYCLES PER SECOND.

H. CALIBRATED ANGLES OF CAMERAS.

1. CALIBRATED CONVERGENT ANGLE OF MAIN CAMERAS - 29 DEGREES 55 MIN.

2. CALIBRATED ANGLE BETWEEN FRAMING AND STELLAR CAMERAS - NOT AVAILABLE.

3. STELLAR - 1 (LOC. OF P. P.)

(A) X EQUALS MINUS .057 MM

(B) Y EQUALS PLUS .088 MM

NOTE: VIEWING POSITIVE, EMULSION UP, COORDINATE SYSTEM IS DEFINED AS PLUS "Y" IN DIRECTION OF FLIGHT AND PLUS "X" TO THE LEFT AND PERPENDICULAR TO LINE OF FLIGHT.

4. INDEX - 1 (LOC. OF P. P.)

(A) X EQUALS MINUS .014 MM

(B) Y EQUALS PLUS .025 MM

NOTE: VIEWING POSITIVE, EMULSION UP, PLUS "X" IS IN DIRECTION OF FLIGHT AND MINUS "Y" IS TO THE RIGHT AND PERPENDICULAR TO DIRECTION OF FLIGHT.

I. IMAGE MOTION COMPENSATION DATA.

FMC PROGRAMMER REFERENCE LEVEL

1. GROUND ANGULAR VELOCITY (RAD/SEC) .0301

PASSES 2D1, 4D1, 5D1, 5D2, 6D1, 6D2, 7D1, 7D2, 8D1, 9D1

2. GROUND ANGULAR VELOCITY (RAD/SEC) .0292

Approved For Release 2008/01/08 : CIA-RDP78B04558A000800090002-3

Approved For Release 2008/01/08 : CIA-RDP78B04558A000800090002-3

PASSES: 17D1, 18D1, 20D1, 21D1, 21D2, 21D3, 21D4, 22D1, 22D2, 23D1, 23D2, 24D1, 25D1, 31A1, 31A2, 36D1, 36D2, 37D1, 37D2, 38D1, 38D2, 38D3, 39D1, 39D2, 40D1, 41D1, 42D1, 47A1.

FMC PROGRAMMER AMPLITUDE LEVEL.

(A) GROUND ANGULAR VELOCITY (RAD/SEC). .0118

PASSES: USED ON ALL PASSES.

J. PROGRAM TIME DATA.

	CAMERA ON TIME (ZEBRA TIME)				PROGRAM ON TIME UP RAMP	PROGRAM DURATION
PASS	DAY	HR	MIN	SEC	(SEC)	(SEC)
2D1	24	01	52	57	1196	154
4D1	24	05	01	00	1808	154
5D1	24	06	26	02	1474	132
5D2	24	06	31	42	1813	106
6D1	24	08	01	16	1749	140
6D2	24	08	05	03	1976	119
7D1	24	09	31	38	1682	124
7D2	24	09	34	23	1848	181
8D1	24	11	00	28	1579	374
9D1	24	12	32	16	1658	317
17D1	25	00	34	15	1511	121
18D1	25	02	02	55	1400	153
20D1	25	05	04	46	1442	537
21D1	25	06	33	45	1348	102

Approved For Release 2008/01/08 : CIA-RDP78B04558A000800090002-3

Approved For Release 2008/01/08 : CIA-RDP78B04558A000800090002-3

21D2	25	06	36	16	1499	106
21D3	25	06	41	14	1797	121
21D4	25	06	44	41	2005	100
22D1	25	08	11	00	1752	116
22D2	25	08	13	36	1907	127
23D1	25	09	41	10	1721	393
23D2	25	09	57	08	2679	145
24D1	25	11	10	53	1671	431
25D1	25	12	44	51	1876	181
31A1	25	21	30	54	850	138
31A2	25	21	35	55	1151	119
36D1	26	05	20	43	1879	89
36D2	26	05	22	51	2006	87
37D1	26	06	49	55	1799	139
37D2	26	06	54	13	2057	331
38D1	26	08	14	56	1469	103
38D2	26	08	20	32	1805	137
38D3	26	08	24	49	2062	255
39D1	26	09	47	24	1583	104
39D2	26	09	50	35	1773	378
40D1	26	11	20	52	1760	393
41D1	26	12	53	24	1881	105
42D1	26	14	29	27	2213	86
47A1	26	21	40	04	905	138

NOTE: DATA IS THE SAME FOR BOTH THE MASTER AND SLAVE UNITS.

Approved For Release 2008/01/08 : CIA-RDP78B04558A000800090002-3

Approved For Release 2008/01/08 : CIA-RDP78B04558A000800090002-3

K. TIME CORRELATION (READINGS IN MILLISECONDS).

PASS	SYSTEM TIME	CLOCK TIME		DIFFERENCE
99	43946.553	55342.018	MINUS	.027
25	44539.152	142334.590	MINUS	.027

L. REMARKS: REV 47 OPERATIONS AND SUCCEEDING OPERATIONS ON MISSION B MAY HAVE ONLY MONOSCOPIC COVERAGE WITH THE STAVE (117) UNIT.

25X1

N. ENGINEERING DATA:

PASS	CAMERA ON TIME (ZEBRA TIME) DAY	HR	MIN	SEC	PROGRAM ON TIME UP RAMP (SEC)	PROGRAM DURATION (SEC)
ØØD	23	23	Ø9	Ø5	Ø	44
11A	24	15	1Ø	33	Ø	32
25A	25	12	23	28	592	49
27A	25	15	14	29	Ø	31
41A	26	12	32	52	649	49
43A	26	15	23	51	Ø	31

FMC PROGRAMMER REFERENCE LEVEL

GROUND ANGULAR VELOCITY (RAD/SEC) .Ø3Ø1

PASSES: ØØD, 11A

GROUND ANGULAR VELOCITY (RAD/SEC) .Ø292

PASSES: 25A, 27A, 41A, 43A,

FMC PROGRAMMER AMPLITUDE LEVEL

GROUND ANGULAR VELOCITY .Ø118

PASSES: ØØD, 11A, 25A, 27A, 41A, 43A.

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25X1

Approved For Release 2008/01/08 : CIA-RDP78B04558A000800090002-3